TESTIMONY

on

Discussion Draft of Legislation to Reauthorize the Magnuson-Stevens Fishery Conservation and Management Act

before the

Subcommittee on Fisheries Conservation, Wildlife and Oceans

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The Need for Reauthorization

The 1996 reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act (the Act) took important steps to improve management of fish stocks in the U.S. EEZ. It did not free us of the problems of overfishing and associated overcapitalization in many fisheries, but its declarations that overfished stocks would be rebuilt, that overfishing was not acceptable, and that fisheries management in general would become more risk-averse under the Regional Councils have had an effect on stabilizing stocks, curtailing declines, and beginning the rebuilding process in some stocks. More steps need to be taken. Proposed amendments in the present reauthorization draft of MSFCA acknowledge the need for additional legislative action aimed at improving fish stocks, the fishing industries, and ecosystems that support fisheries. I am cautiously optimistic that marine fish stocks can be managed sustainably. Even with perfect legislation, however, achieving and insuring sustainability will not be easy tasks.

I appreciate having the opportunity to address the Subcommittee and to present my views on the discussion draft for reauthorization of the Act. My comments mostly represent personal views, particularly on science-related issues, and not those of the University of Maryland's Center for Environmental Science (UMCES). However, my recommendation to add language to the Act that establishes Cooperative Marine Education and Research (CMER) programs between the National Marine Fisheries Service and seven universities is an initiative supported by UMCES.

Recent History, Precautionary Management

Emerging paradigms in fisheries management on a global basis hinge on the 'precautionary approach' that has been adopted as a standard (FAO 1995). The ethic espoused in this approach advocates setting risk-averse targets as 'biological reference points' rather than more liberal 'thresholds' or 'limits' that had been recommended historically. The precautionary approach is accepted in principle and is being applied in many fishery management plans, although the present Act and the draft discussion are mostly silent on it. An explicit acceptance of the precautionary approach and a definition of it in the Act would be helpful to promote the ethic, both in principle and in effect.

Fishing Effort, Overcapitalization and Alternatives for Fisheries Management

Excess Effort and Overcapacity

Language in the discussion draft (Sec. 3 and Sec. 4) that addresses reduction of overcapacity and overcapitalization is welcome. These problems have been recognized repeatedly as the major problem in controlling and managing marine fisheries. This is true globally as well as in the United States. The National Academy report, "Sustaining Marine Fisheries" (NAS 1999a) urged solution of this problem to allow U.S. fisheries to be managed sustainably. There is excess effort invested in many of the nation's valuable fisheries. Serious allocation, conservation, and economic problems too frequently accompany the excess effort and capacity of fisheries, eroding potential benefits and profits, and threatening sustainability. Language in the draft, if it generates actions to reduce capacity, can be beneficial to some marine fisheries.

Individual Quotas and Community Development Quotas

Limiting entry and establishing individual quotas (IQs) have been debated vigorously in the U.S. (e.g. Hanna et al. 2000) and globally. A NAS study (1999b) was guardedly positive on the role of IQs and recommended them for specific fisheries at the discretion of the Regional Councils. The accumulated evidence from a scientific perspective supports the implementation of IQ management under appropriate circumstances, recognizing the need to consider initial allocation of shares, the threat of monopolies developing, and the rules for transfer and duration of IQ permits.

It was good to see language in the discussion draft that will allow Councils to develop new IQ fisheries (Sec. 12), and which addresses the issues that most often concern those who are opposed to such limited-access approaches to management. I expect that declaration of IQ programs and implementation will continue to be contentious in many marine fisheries. The requirement to hold referenda among stakeholders before an IQ plan can be instituted is included to democratize the process, but choice of those included in a referendum is to be determined by the Council, with guidance from the Secretary. The 'guidance' from the Secretary, in the absence of specific directives in the Act, will be critical in determining effectiveness of IQ implementation. Firmer, more prescriptive language on the referenda criteria would be helpful.

Benefits of IQs, in addition to controls on effort (and fishing mortality), are probable. For example, IQ-based management is potentially more ecosystem friendly than open-access participation in some fisheries. This may be true, for example, with respect to fishing impacts on habitat and with respect to bycatch reduction.

Ecosystem-Based Approaches and Issues

Ecosystem-Based Management

The proposed language in the discussion draft (Sec. 6) may not be strong enough to insure effective actions by the Councils. It urges managers to "support and enourage efforts to understand the interactions of species," which is important and could have a positive influence on "better stewardship and sustainability of coastal fishery resources." But, there are no firm directives that lead to implementatin and no explicit approaches mentioned. For example, the NMFS Fisheries Ecosystem Principles Advisory Panel (1999) and the National Research Council's Committee on Marine Protected Areas (NAS 2001) strongly recommended incorporation of protected areas and other spatially-explicit approaches for fisheries management. These approaches tend to reduce the dependency of management on conventional effort and landings controls towards more ecosystem-sensitive approaches that can be favorable to protect essential fish habitats, reduce bycatches, and protect threatened species.

Fisheries Ecosystem Plans

The amended MSFCMA (1996) recognized that marine fisheries management has been too little concerned with marine ecosystems, their stability, variability, and sustainability of high productivity that will assure sustainable and profitable fisheries. Accordingly, Congress mandated that an Ecosystems Principles Advisory Panel be established to undertake an analysis of the extent to which ecosystem principles were being applied in fisheries and to recommend actions that should be undertaken by the Secretary and Congress to expand application of ecosystem principles in fisheries management. The report of the Panel (NMFS, 1999) included many specific recommendations and a major conceptual recommendation--the proposal that each Council develop a Fishery Ecosystem Plan(s) within its region. A FEP is envisioned to be a document that serves as an umbrella under which individual Fishery Management Plans (FMPs) would reside and to which they must adhere. Adopting the FEP concept is likely to insure that many individual FMPs will be more ecosystem-sensitive because the function and structure of ecosystems would be highlighted when managing an ecosystem's constituent fisheries.

I was pleased to see language in the discussion draft that addresses the need to develop criteria and to move towards establishment of FEPs (Sec. 6). However, the language may not be sufficiently firm and the timetable to establish criteria seems far too long. As written, after two years Councils are to complete development of criteria for FEPs and then within one additional year must (with the Secretary and Congress) select specific marine ecosystems within their regions to "develop and begin to implement research plans" that address issues identified in the Fisheries Ecosystem Panel report (NMFS 1999). The approach is good, but the timetable is not. After three years, the Councils need only begin to develop research plans. When will management measures based on ecosystem principles be instituted? I recommend that language in the discussion draft on ecosystem-based management be reconsidered to require more timely actions, and that explicit recommendations be included to plan for implementation of FEPs.

Essential Fish Habitat

The SFA (1996) contains specific language on Essential Fish Habitat (EFH), directing Councils to identify such habitats in their respective FMPs and presumably to implement measures to protect such habitats to insure healthy fisheries. The definition of EFH as it now stands, however, tends to be so broad that it is questionably useful in the management process, although the ethic that supports broad consideration of EFH is appropriate. It is reassuring that there is recognition of the broad habitat needs to support marine fisheries, but the language in the discussion draft of the Act does not clearly recognize that some habitats are especially important to protect and produce the many and diverse stocks of fish being managed under the MSFCMA. I believe that this is a deficiency of the discussion draft. We should be moving towards identifying the specific types of habitat that are critical for some species or species groups, which have been

termed Habitat Areas of Particular Concern (HAPC), and which deserve particular attention in managing the stocks. Some additional consideration is necessary in the discussion draft, which then should be followed by addition of more specific language on EFH that provides guidance to managers, in addition to highlighting the criteria for, and kinds of, habitat-related research that are required. I am not certain that a specific National Standard needs to be added to the Act, but this possibility should be considered.

Bycatch

The discussion draft includes strengthening of recommendations and guidance for bycatch reduction in marine fisheries (Sec. 9). This language is very welcome in the Act. Bycatch can be wasteful and potentially damaging to marine ecosystems. There are ways to address the problem and to reduce the amount of 'technical interaction' in fisheries that will lower the catch of non-targeted organisms. Observer coverage and modification of gears can document and reduce bycatch. Research on methods and approaches to reduce bycatch already are being implemented; the language in the discussion draft will reinforce and strengthen these actions.

The language in the discussion draft that specifically allows distribution of dead bycatch to charitable organizations, while acceptable in principle, could be misdirected if it induces subtle shifts in fishing strategies and locations by fishermen to areas where bycatches may be high. Under 'Bycatch Reduction Gear Development' (Sec. 408), it seems remiss to not clearly specify the 'Amount of bycatch, if known' in the list (page 12, lines 23-25) for fisheries with bycatch problems (page 12, lines 23-25 of discussion draft). This would highlight the magnitude of the problem in those fisheries where bycatch is problematical.

Marine Protected Areas

Closed area management is not new in fisheries, but nevertheless it has been used rather sparingly. The concept of marine reserves or other closed areas, with various restrictions on fishing and other human uses, was recognized in the 1996 reauthorization of the MSFCMA and has been on the planning tables of Regional Councils in recent years. Some marine areas have, in fact, been closed to some kinds of fishing effort (e.g. parts of Georges Bank). A detailed study of MPAs by the National Academy of Sciences (NAS 2001) broadly evaluated their potential, including their use as a tool in fisheries management. The NAS Committee concluded that MPAs have a role in fisheries management. In a broad sense, setting aside areas to protect spawning stock can serve as a buffer against the uncertainty of obtaining accurate stock assessments, i.e., a kind of insurance. More specifically, the NAS Committee recommended that MPAs for fisheries management should be designed as parts of broader networks of MPAs that are zoned for permitted activities, and that the networks be embedded in a broader plan of coastal ocean management that considers the full spectrum of human activities and need to protect ecosystem structure and function. The NAS Committee recognized and emphasized that stakeholders (fishers) must be included in every stage of MPA development, from discussion of concept through design, and continuing into the evaluation and monitoring phase after implementation.

MPAs are not a stand-alone solution to fishery management problems but their role, which is likely to increase, should be recognized. Language in the pending reauthorization of the Act could be added to address the issues and identify probable benefits of MPAs, to specify research needs, and develop criteria for MPA implementation. The impetus to do this is underscored by the Executive Order issued by President Clinton in May 2000 directing federal agencies to develop networks of MPAs in the coastal ocean.

Data and Information Needs

The issues of data availability, collection of data, and data management for stock assessment and management purposes represent key needs for improvement of fishery management and, to an extent, are addressed in the discussion draft (Sec. 5 and Sec. 20). A National Academy of Science Committee (NAS 2000a) developed a comprehensive list of detailed recommendations for data collection and management specifically addressed to Congress, NMFS, or the Councils. That committee recommended implementation of a national Fisheries Information System (FIS), which remains an important need and could be emphasized in the reauthorized Act. The summarized and consolidated NAS recommendations, many of which should be considered for inclusion in the reauthorized Act, are:

- •*Congress and NMFS*. Standardize and improve fisheries data collection and management methods and procedures nationwide. Develop a Fisheries Information System (FIS).

- •*Councils*. Be more proactive in determining needs and requesting appropriate data and models to improve potential for success in management. This recommendation is applicable to both commercial and recreational fisheries.

- •*Congress*. Make commercial fisheries data more accessible to agencies for stock assessment scientists by amending laws relevant to confidentiality.

- •*NMFS*. Develop more cost-effective ways to collect and manage data, including data collected for recreational fisheries in the Marine Recreational Fishery Statistics Survey (MRFSS) surveys.

- •*NMFS*. Develop new data collection and stock-assessment methods, including those that consider ecosystem functions and processes, habitats, and environmental variability.

- •*NMFS*. Involve stakeholders (fishers) in the data identification and collection processes more than at present. Better cooperation with stakeholders will improve quality of data. Reports of data analysis and assessments should be made available to stakeholders on a regular basis.

- •*Congress and NMFS*. Insure that NOAA has a strong and capable fleet of research and survey vessels for fisheries data collection and assessment.

- •*Congress and NMFS*. Increase the level of observer coverage on fishing vessels to improve data collection and interpretation.

- •*Congress, NMFS and Councils*. Institute better and more complete monitoring and evaluation of marine ecosystems and EFH. Build this information into stock assessments.

Cooperative Research and Education

Many of the needs for fisheries science, the requirements for management action in the existing Act, and the implementation of recommendations in the discussion draft will require increased funding and also additional staff and personnel trained in quantitative fisheries science, ecosystem science, economics, and sociology. At present, the National Marine Fisheries Service (NMFS) cannot meet its demand for stock assessment specialists and has too few social scientists and economists on its staff to effectively provide management information and advice to the Councils. A National Academy of Sciences workshop (NAS 2000b) on manpower needs in NMFS explored the need for such experts and made recommendations to

NMFS to help recruit new talent. However, it is not certain that such needs can be met without significant stimulation of effort and funding by Congress. Furthermore, the needs for stock assessment scientists and socioeconomic experts on Council staffs and in academia (to train the new cadre of experts) is problematic, a kind of Catch-22 since virtually all experts in quantitative fisheries science at the PhD level who are U.S. citizens now take positions in NMFS, leaving a minuscule pool of talent for Council staffs or for academic institutions to recruit into faculty ranks. Language in the Act that served to insure programs and funding to address the research and educational needs of NMFS and other research institutions would be an excellent investment for sustainable fisheries and ecosystems that support them.

Cooperative Marine Education and Research (CMER)

To meet the challenges posed by issues of resource management in the marine environment, a partnership between NMFS and universities has been proposed to conduct research on coastal fisheries and to help resolve the manpower shortage in NMFS of highly-trained fishery scientists, marine ecologists and socioeconomics experts. The Cooperative Marine Education and Research (CMER) program already exists in four universities (University of Massachusetts, University of Rhode Island, Rutgers University, and College of William and Mary) through funding from the NMFS Northeast Fisheries Science Center. The Director of each university's program is a NMFS scientist who administers the program and participates in research and education activities at the academic institution. CMER could benefit immensely from a permanent authorization in the Act and by expansion to include the universities already participating plus three others (University of Maryland, University of New Hampshire and Stony Brook University- -the State University of New York). These universities constitute a consortium that will partner with NMFS to meet research and educational needs of the agency and the country.

The following language is proposed for inclusion in the Act: "Cooperative Marine Education and Research--For the purposes of developing adequate, coordinated, cooperative research and training programs for living marine resources, the Secretary may establish a Cooperative Marine Education and Research Program. Under this program the Secretary is authorized to enter into cooperative agreements with universities and institutions of higher learning in order to conduct research in areas that support conservation and management of living marine resources. Research conducted under this program may include biological research concerning the abundance and life history parameters of stocks of fish, the interdependence of fisheries or stocks of fish, and other ecosystem components, and the linkages between fish habitat and fish production and abundance."

Summarizing

There are many science-related issues that need to be addressed in the reauthorization process. The problems of fisheries science and management, and recommendations to solve them, were nicely encapsulated by Pamela Mace in her keynote address at the 2nd World Fisheries Congress (Mace, 1997). Mace's essay is global in scope, but most of the issues she addresses are relevant to U.S. fisheries. She believes that overcapacity is the single largest problem in fisheries management on a global basis, and that control of excess effort is essential to have healthy fisheries. The draft language in the reauthorized Act now recognizes this issue and proposes actions to alleviate the problem. Also, Mace (1997) states, "I contend that, to date, lack of national policies and institutional failures have been more limiting than science, management or data. Sound national and international policy and effective institutions are essential for providing the necessary environment to foster good science, management and data collection programmes." The reauthorization of the Act must provide the legislative guidance to support NMFS and the Councils that

will allow them to conduct the science, recommend effective management measures, and then implement regulations to assure healthy and sustainable fisheries. Amendments proposed in this discussion draft of the Act, if supplemented by additional recommended actions and firmer, more prescriptive language, will help to insure that those goals are met.

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